# OWNER'S MANUAL

ACOUSTIC ENERGY

LINEAR centre

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# 1. Introduction

Welcome to the Linear Centre. Perhaps more than any other hi-fi product, speakers are sensitive to installation so please take a little time to read this manual and to follow, as far as practical, the installation guidelines it contains. Careful installation will help ensure that your Linear Centre performs optimally. Should you have any questions not covered here we are happy to try and answer them either by telephone or email. Contact information can be found in Section 11.

Following this introduction, the Manual is divided into sections covering handling, installation, positioning, amplifier compatibility, connection, listening, matching products, specifications, warranty and contact information. We recommend that you read at least the first five of these sections carefully before installing and using your Linear Centre.

# 2. Handling

The Linear Centre is a relatively delicate precision engineered product that can be damaged by inappropriate handling. Please take care when unpacking or moving the speaker not to touch any of the drivers. Damage to a driver will at best degrade a Linear Centre's performance and at worst result in its complete failure.

The enclosure surfaces should also be handled sympathetically. Any cleaning should only require a soft cloth, slightly dampened if necessary. Be wary of using any polishes or solvent based cleaning agents.

The packaging should be retained for future use.

# 3. Installation

The Linear Centre is intended to be used in a home theatre system located either directly above or below the screen. It can be stood either directly on a furniture unit, integrated within a screen stand, mounted on a dedicated speaker stand or on a wall using appropriate bracket hardware.

Best results are likely to be gained if the Linear Centre is directly coupled to the floor via a dedicated, spiked stand. If the screen stand is to carry the Linear Centre it is advisable to de-couple it from the screen with the supplied adhesive rubber feet so that its does not disturb the picture. If a wall bracket is to be used it should be as rigid as possible and firmly attached to a brick-built wall.

The Linear Centre is magnetically shielded. However, the extreme sensitivity of some CRT tubes to low levels of magnetic flux may mean that, in rare cases, the shielding may not be sufficient. Should your screen suffer picture distortion caused by the proximity of a centre speaker contact your dealer installer or Acoustic Energy for advice.

The following section provides further general advice on Home Theatre speaker positioning and room layout.



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# 4. Positioning

The position of the speakers in a home theatre installation will have great influence over its performance. It is worth spending some time experimenting both with the finer points of speaker positioning, as well as the larger scale issues of room layout. **Diagram One** illustrates an idealised general home theatre speaker layout.

If you are already familiar with the characteristics of your home theatre room, and the way speakers perform in it, you may already have a good feel for where to position your Linear Centre. However, installing any new speaker component provides a good opportunity to review an existing set-up and perhaps make improvements.

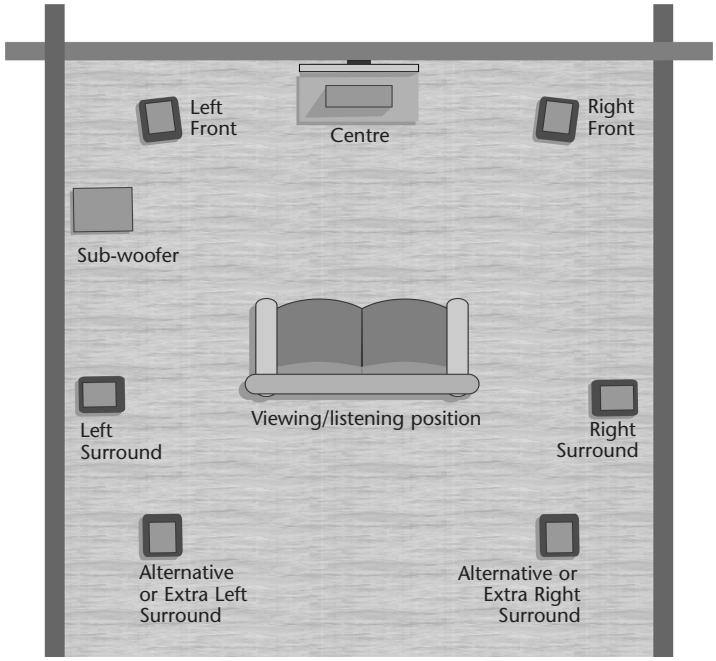
The position requirements for a Linear Centre are as follows:

- Between 0.05 and 0.5 metres from the rear wall.
- Generally in-line with the display screen.
- Directly above or below the display screen.

Don't worry if, thanks to the architecture or layout of your room, it is not practical to follow each requirement or the layout diagram exactly. The most important thing is to experiment with the different options that are practical and find the one that works best.

Once your Linear Centre is connected (see Section 5) and working, and you begin to become familiar with its performance, it is likely to be worthwhile experimenting a little more with its positioning. For example, reducing the distance between the speaker and the rear wall will increase the level of bass and low midrange making the speaker sound warmer. The warmth however is likely to be gained at the expense of some mid-range clarity.

## Diagram One



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# 5. Connecting

Connecting your Linear Centre to an amplifier is fundamentally a simple process, however, there are some choices to be made and issues to consider concerning connection mode, connectors and cable type.

Linear Centre is fitted with two pairs of binding-post terminals - one pair each for the low frequency and high frequency drivers. Two pairs of terminals enables Linear Centre to be connected **conventionally** (single wire), **bi-wired** or **bi-amplified**. As supplied, the high and low frequency terminals are connected together by metal shorting links ready for conventional connection.

The terminals can accept either stripped wires, spade connectors, or 4mm plugs. Each of these termination methods is potentially equally effective and the choice is likely to be influenced by type of speaker cable used. Your dealer, distributor or cable manufacturer will be able to offer advice.

## Conventional [single wire] connection

Conventional connection requires that the shorting links remain in place between the high and low frequency terminals. Simply connect the speaker cable to either pair of terminals ensuring correct **connection polarity** as described below.

## Bi-Wire Connection

Bi-wiring separates the low and high frequency connections and can provide enhanced sound quality. A second set of cables (or alternatively, a multi-way bi-wire cable) is required. The shorting links should be removed and stored for any subsequent single wire use.

The two cables for each speaker should be connected in parallel to the amplifier terminals. At the speaker, one cable should connect to the high frequency terminals and one to the low frequency terminals. Ensure correct **connection polarity** as described below.

## Bi-Amplifier Connection

Bi-amplifier connection adds a second power amplifier to the system so that high and low frequency sections have dedicated amplifiers. Significantly enhanced sound quality is possible. One stereo amplifier should be connected to the high frequency terminals of each speaker and a second stereo amplifier connected to the low frequency terminals. The shorting links should be removed and stored for any subsequent single wire use. Ensure correct **connection polarity** as described below. Follow the amplifier manufacturer's guidance on connecting the amplifier input signals.

**The shorting links must be removed for bi-amplifier connection. Failure to do so will likely result in damage to the amplifiers.**

## Connection Polarity

It is important when connecting speakers to ensure that each terminal is connected with the correct polarity. Positive speaker terminals should always be connected back to amplifier positive terminals, and negative speaker terminals connected back to amplifier negative terminals. Performance will be seriously degraded if connections are made with incorrect polarity.

Take care when connecting cables not to touch the negative and positive terminals together and "short-circuit" the amplifier. Make connections with the amplifier switched off.

Choice of cable type will be influenced by the characteristics of other components in your hi-fi system and your dealer or distributor will be able to advise. Even so, there are some simple guidelines to consider:

- Cable runs to should be kept as short as possible.
- Short cable runs are especially important if the cable is of relatively small cross-sectional-area.
- If the cable is advertised as "directional" care should be taken to ensure that its orientation is as recommended.



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# 6. Amplifiers

The Linear Centre is a relatively high sensitivity speaker that does not require a generously rated power amplifier for adequate volume levels to be achieved in an average listening room. A minimum of 25 and maximum of 175 Watts into 8 Ohms per channel is recommended. Linear Centre also offers a relatively easy load to the amplifier and does not make unusually heavy demands on its power delivery.

No overload protection systems are fitted to the Linear Centre so it is possible to cause damage through over-driving. Such damage can occur whatever the power rating of the amplifier and is not covered by any warranty. If ever the sound at high volumes becomes distorted your Linear Centre is at risk of damage. In such circumstances the volume must be reduced.

# 7. Listening

It is wise before listening to your Linear Centre to make one final check of the cables and connections. If all appears well begin listening at a relatively low level to confirm that the system is operating as expected. Only increase the volume if you are happy that the sound at low levels is fundamentally as expected. If you are unhappy, turn the system off and re-check all the cables and connections.

Linear Centre may take a little time to "run-in", and similarly the system will also perhaps take some time to reach normal operating temperatures. It is unwise therefore to make rapid judgements about the performance of the speaker. Your ears too will take some time to adjust to the new sound, so revisiting the system set-up, speaker positioning especially, is best left for a few days.

# 8. Specification

**Type:** Two and a half-way, reflex loaded, time aligned speaker.

**Bass/Mid Drivers:** 2 x 130mm pressed alloy cone with 32mm thermally bonded voice coil. Shielded high-power long-throw magnet system.

**HF Driver:** Pre-coated textile dome with ferro-fluid cooled neodymium magnet system and rear heat sink.

**Filter Network:** 3rd order at 3.1kHz, 2nd order at 275Hz

**Cabinet:** 15mm MDF carcass with composite layer front panel and driver de-coupling.

**Frequency Response:** 60Hz to 28kHz ±3dB

**Frequency Range:** 50Hz to 28kHz @ -6dB

**Power Handling:** 175W peak programme

**Amplifier Compatibility:** 25 - 175 Watts into 8 Ohms

**Nominal Impedance:** 8 Ohms

**Sensitivity:** 91dB for 1 Watt at 1 metre

**Terminals:** Gold plated bi-wire binding posts

**Dimensions (H x W x D):** 180 x 620 x 200mm

**Weight:** 10.5kg (single, unpacked)

Acoustic Energy reserves the right to modify product specifications.



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# 9. The Linear Range

The **Linear Centre** is part of a range that includes **Linear One** stand-mount speaker, the **Linear Three** floor-stand speaker and the **Linear Sub** active sub-woofer. **Linear One**, **Linear Three** and **Linear Centre** incorporate time-aligned drivers to improve image quality, depth and focus.

**Linear One**

Linear One is a compact two-way stand-mount speaker that adds high resolution accuracy to the imaging benefits of time alignment.

**Linear Three**

Linear Three is a true three-way floor stand speaker that builds on the performance of the Linear One with wider bandwidth, higher power handling and enhanced detail resolution.

**Linear Sub**

Linear Sub is an active sub-woofer perfect for enhancing Linear One bass performance or handling the low frequency effects channel in Linear audio-visual systems.

# 10. Warranty

Your Acoustic Energy speakers are guaranteed against original defects in materials, manufacture and workmanship for 3 years from the date of purchase.

Under this warranty Acoustic Energy agrees to repair any defect or, at the company's discretion, replace the faulty component(s) without charge for parts or labour. This warranty does not imply any acceptance by Acoustic Energy or its agents for consequential loss or damage and specifically excludes fair wear and tear, accident, misuse or unauthorised modification.

This warranty is applicable in the United Kingdom only and does not in any way limit the customer's legal rights. Claims and enquiries under the warranty for Acoustic Energy products purchased outside the UK should be addressed to the local importers or distributors. If you have reason to claim under the warranty please contact your dealer in the first instance.

Please retain all original packaging materials for possible future use. We suggest that you complete details of purchase now and keep this information in a safe place for future reference.

**Name:** _____

**Address:** _____

_____

**Dealer:** _____

**Purchase Date:** _____

**Serial Numbers:** _____

# 11. Contact


**Acoustic Energy Limited**
**16 Bridge Road**
**Cirencester**
**Gloucestershire GL7 1NJ**
**UK**

**Tel:** +44 (0)1285 654432 (Sales)
+44 (0)1285 656890 (Technical)
**Fax:** +44 (0)1285 654430
**Email:** info@acoustic-energy.co.uk
**Web:** www.acoustic-energy.co.uk




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Acoustic Energy Limited, 16 Bridge Road, Cirencester, Gloucestershire GL7 1NJ.
Tel: +44 (0)1285 654432 (Sales), +44 (0)1285 656890 (Technical). Fax: +44 (0)1285 654430
Email: info@acoustic-energy.co.uk
Web: www.acoustic-energy.co.uk

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